



Summary of Fishery Surveys Skinner Creek Flowage (also called Sobieski Flowage) Rusk and Sawyer Counties, 2016

WDNR's Fisheries Management Team from Park Falls completed a mid-June angling survey and a daytime electrofishing survey in mid-August to assess the fish community in Skinner Creek Flowage, where the recreational fishery potential seemed to be limited by winterkill losses and basin characteristics. Quality, preferred, and memorable sizes referenced in this summary are based on standard proportions of world record lengths developed for each species by the American Fisheries Society. "Keeper size" is our own description applied to bluegill ≥ 7 inches long and to black crappie and yellow perch ≥ 9 inches long, based on known angler behavior.

Survey Effort

Beginning at 9:45 a.m. on June 16, 2016, two experienced anglers fished from a johnboat on Skinner Creek Flowage for 5.0 hours (10.0 hours of angling effort). One focused solely on largemouth bass and northern pike. The other angler targeted only gamefish for 3.5 hours, directing 1.5 angler-hours toward panfish and gamefish simultaneously. They used spinning tackle with plastic or rubber baits for bass and pike and a small jig baited with a night crawler for panfish. Dense aquatic vegetation made fishing difficult, especially presenting baits near shore—most of their angling effort happened along the deeper weed edge. All fish landed were immediately measured and released. The sky was clear and air temperatures were in the 70s. Water temperature was not recorded, but the angling survey probably occurred within the three-week period when largemouth, bluegills, and other sunfishes typically spawn in northern Wisconsin lakes.

They also completed a daytime electrofishing circuit of Skinner Creek Flowage's entire shoreline on August 18, 2016 beginning at 10:25 a.m. The shallow, narrow, and unimproved boat access prompted us to launch our smaller electrofishing boat from a trailer with rollers and only one axle. One crew member wearing polarized sunglasses collected all fish that were sufficiently stunned. Poor visibility in dark-stained water and dense lily pads, combined with low conductivity (unmeasured) and less electrical output than our large electrofishing rig can generate, severely compromised their sampling efficiency, and most fish darted away before they could be captured. Their electrofishing route followed the shoreline as closely as practical, but a dense band of floating and submergent vegetation kept them offshore in many places. Several mid-lake electrofishing passes along the weed edges near the inlet contributed to the total sampling effort (1.35 miles in 0.52 hours).

Habitat and Water Quality Characteristics

Skinner Creek Flowage, sometimes called Sobieski Flowage, is a shallow, 66-acre impoundment on the North Fork Skinner Creek. Straddling the Rusk-Sawyer county line, the soft water impoundment is located entirely within the Flambeau River State Forest just east of County Highway M about 16 miles straight-line distance southwest of Phillips, WI. Maximum depth is 5 feet, the near-shore lake bottom is largely muck (75%), and a wide band of dense aquatic vegetation surrounds the lake's perimeter. Some rock (10%), sand (10%), and gravel (5%) are associated with the 800-foot berm that forms the impoundment. Near the inlet, dense plant stands extended even farther from shore, covering the shallowest, upstream-most third of the flowage. The west shore had hardwood/conifer forest cover, while the east shoreline had an encroaching marsh edge. Consistent with our on-site observations, about half of the surface area shown as open water in the 24K Hydro layer of WDNR's on-line mapping application (Surface Water Data Viewer) appears to be floating bog or marshland on the corresponding aerial photographs. Dissolved oxygen concentrations measured at one-foot depth intervals ranged 0.3–0.4 milligrams per liter on January 21 and February 17, 1998 and 0.2 mg/l from surface to bottom on March 15, 1999. Oxygen levels measured at 5.8–7.7 mg/l on February 1, 2017 and at 9.0 mg/l on March 7, 2017 were far more favorable for fish survival, though meltwater influxes in several warm spells may have altered or reset the progression of decreasing oxygen concentrations in typical winters. Foul odors were occasionally noted with past oxygen measurements, presumably the rotten egg smell of hydrogen sulfide that is produced when plants decay in the absence of oxygen.

Summary of Results

Angling captured three fish species, electrofishing captured ten, and catch rates of all species were very low with both gear types. While electrofishing, the dipper saw three northern pike not captured and many large swirls in the water, likely from pike eluding capture. Electrofishing capture rate was highest along the rocky berm on the southwest shoreline. In the angling survey they saw about 10 small pike that followed or hit the bait, but were not landed. Angling produced no largemouth bass, and electrofishing captured a single largemouth bass fingerling. Our surveys found no evidence that the 25,000 muskellunge fry and 26,400 largemouth bass fingerlings stocked in 1977 – 1982 had established lasting populations.

	Angling		Electrofishing		
	Fish/hour	Length (inches)	Fish/hour	Fish/mile	Length (inches)
Northern pike	0.40	17.7–23.0	1.94	0.74	16.7
Largemouth bass			1.94	0.74	3.5
Yellow perch	0.67	8.4			
Pumpkinseed	0.67	5.2	13.5	5.19	2.6-6.2
Bluegill			1.94	0.74	2.3
Black crappie			1.94	0.74	2.0
Black bullhead			5.81	2.22	6.6–7.9
White sucker			1.94	0.74	
Golden shiner			3.87	1.48	
Common shiner			1.94	0.74	
Central mudminnow			3.87	1.48	

These catches mirrored the reports we received from anglers who live nearby and often catch many bluegills and pumpkinseeds 3-5 inches long, occasionally catch “snaky” but no large pike, sometimes catch keeper-size crappies and perch, and never catch largemouth or smallmouth bass in Sobieski Flowage. Our 2016 samples, anglers’ accounts, and local file records all describe a fish community structured by environmental factors (i.e. shallow depth, high aquatic plant density, low streamflow, high biological oxygen demand) that give rise to fish mortality when dissolved oxygen is depleted in the ice-covered season.

Perch, crappies, and pike in the size classes we captured and anglers reported suggest that winterkill probably does not occur every year, or that some individuals in these populations seek and find refuge with survivable conditions, perhaps in the tributary. With the extensive renovations to the dam completed in 1996, the new configuration of the overflow spillway now allows fish to move into and out of the flowage when discharge is high, affording occasions for upstream and downstream populations to mix and recolonize the impoundment.

In general, we concur with statements in the file record, suggesting that certain management actions (such as overwinter drawdown, routing spring discharge through the overflow spillway rather than the controllable outlet, lake aeration, and stocking) might help to moderate some of the ill effects that preclude a fishery in Sobieski Flowage. However, we also agree with our predecessors’ caution that inherent characteristics will always limit this flowage’s potential to support a decent fishery, despite intervention, and “the best we can hope for is a marginal fishery.” The file contains recommendations, plans, and even cost estimates for the measures listed above, but no record that any were implemented.

Maintaining a full-pool reservoir in spring, keeping the overflow spillway free of obstruction, and routing spring flows through the spillway would all serve as low-cost or no-cost measures to assure that natural fish movements can continue to replenish the fish populations and provide the fishing opportunity that we and others found in Sobieski Flowage. We do not believe that lake aeration would benefit the fish community enough to justify the cost of installation and seasonal operation.

Despite its low potential as a recreational fishery, Sobieski Flowage supports many uses by other aquatic life, including waterfowl, furbearers, reptiles, amphibians, and invertebrates.

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